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Local Agents' Cooperation as a Signal Game: Firms, Local Governments and Investment Strategies.

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Abstract

The aim of this paper is to examine the strategies of cooperation and conflict adopted by two dominant local agents in order to maximize their payoffs. Research uses as methodological tool a signal game that informs actors about potential gains and risks. Two actors support the game, namely local government with a high level of competences, and a local firm. Local government has significant power in the field of local entrepreneurship while local firm is interested in running a new investment in the region.

The game is constructed using signals that either guarantee payoffs or produce losses for both actors. Local firm confronts two options: to run the investment project in the local jurisdiction or to defect. Intraregional cooperation among local actors determines the options of equilibrium in the game generating conditions for local development. Sufficient condition for attracting investment prerequisites high levels of cooperation between local government and firm. The capacity of local government to implement effectively the reform is the key variable of the game. As a sequence: (a) Local actors should adopt strategies that relate their profits with the prosperity of the region, (b) Policy implications of local government should focus on the transformation of its function, in order to attract investments and successively to improve local welfare.

***Keywords*:** Regional Development; Institutional Reforms of Local Governments; Game Theory

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1. Introduction

One of the most significant effects of local government institutional reforms is the generation of new conditions, for the interaction among dominant actors. The upgrading of competences for local and regional governments provides the potential for regulative policies in their provinces (Wollman, 2004; Chonianopoulos, 2012). Local administrations acquire jurisdictions that enable cooperation with local firms, which on their turn can drive to the improvement of local living standards. Institutional reforms reshape the strategies of local actors as new conditions for cooperation are emerged. The implementation of investments becomes localized as the transfer of services from central government to local administration takes place. Regional development takes aspects of interaction among local actors in terms that the final outcome of this dynamic interplay is transformed as an input of local economic circuit.

The aim of this paper is to assert a methodology that estimates the impact of local actors' cooperation during the implementation of a reform, on regional development. More specifically the research questions that the paper aims to answer are the following: 1) What is the sufficient condition for attracting investment in a region? and 2) Under what conditions intraregional cooperation among agents and implementation of local government's institutional reforms impact on investments' attraction? The methodology focuses on the level of interaction, among main actors of a region, primarily local governments and firms. A signal game is employed, in order to realize the basic options of the interaction strategies that are adopted by a firm and local government.

Recent studies have turned their interest on the examination of regional development by the elements of Game Theory (Steinacker; 2002; Feiock & Park 2005; Sarafopoulos et al, 2013). Their findings reveal that the dynamic interplay among local dominant actors is reproduced on the grounds of cooperation and conflict. The engagement of local actors into commonly accepted strategies implicitly declares that their atomic interest is associated with social welfare.

However, there is a lack of interest in the literature about the importance of signals in the intraregional interaction. Signal games determine clearly the options for actors, as they provide guarantees about the proceedings of each separate choice. Actors have the potential to select their strategies due to existent possibilities and to forecast their payoffs (Osborn & Rubinstein, 1994; Gibbons, 1992). In the game that is presented below firm decides to invest in a specific region, only after the weighing of possible equilibria.

This paper is articulated as follows. In Section 2, literature review focuses on relevant studies of Game Theory in regional development. In Section 3, a signal game is introduced as a methodological tool of understanding the options of intraregional cooperation. Finally in Section 4, conclusions are constituted and policy implications are proposed

2. Literature Review

2.1 Games and regional development

Game theory provides strong insights about the interaction amongst actors with different interests. Studying the determinant of equilibrium in economic system through games, is substantial since the possibilities about its materialization are more visible, even when asymmetric information is the case (Abreu et al, 1990). Especially in the field of two actor games, cooperation can be transformed as a crucial input of equilibrium (Nash, 1950; 1953).

The key point nevertheless, is the consolidation of a stable equilibrium point that promotes social welfare. Social welfare accrues when the accomplishment of Pareto optimum coincides with Nash equilibrium (Maskin, 1985). Under this option, the interests of individuals are identified by improvement of local living standards. The adoption of strategies by local dominant actors, that upgrade local welfare, generates twofold outcomes. On one side, the improvement of their welfare takes place, whereas on the other, the prospect of development advances the multiplicative function of economic circuit. Further, it should be notified that delocalization of investments can lead to deterioration of social welfare (Kalogeresis & Lambrianidis, 2008).

Regional economic development has been studied in the literature, throughout the use of game theory elements by interpreting linear and non linears option in regional systems (Rosser, 2011). In the fore of analysis, stands the interaction among dominant local/regional actors, and its impact on local economic activity (Ellis & Rogers, 2000;